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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,519	03/29/2001	Eric J. Horvitz	MS91212.1	5434

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EXAMINER

WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,519

Applicant(s)

HORVITZ, ERIC J.

Examiner

William H. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-40 and 42-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-40 and 42-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1, 3-40 and 42-45 are pending and have been examined.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June 2005 has been entered.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 13 June 2005 was considered by the examiner as indicated on the IDS.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1, 3-14, 17-38 and 42-45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claims raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a

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practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101. The language of the method claims refers to a method that could be done entirely by a person as a mental step or using pencil and paper. Further claim 1, for example, merely states "maximizing an expected value", it doesn't actual download the resources. The method steps also do not require any hardware for any of the steps.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5-7, 8, 10, 15-19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by **Robinson** (USPN 5,918,014).

Claim 1

Robinson disclosed a method for downloading resources, each having a size, from a source to an intermediate storage facility, having a finite storage capacity (*column 1, line 65 to column 2, line 31; an advertisement is the downloaded resource*), the method comprising:

determining a probability of using a resource (*column 2, lines 9-27*), the probability in part determined via;

accepting at least one user-based factor (*column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28*);

accepting at least one resource-based factor (*column 3, lines 3-15; column 17, lines 2-11*); and

maximizing an expected value of downloaded resources via utilization of the at least one user-based and the at least one resource-based factor (*column 1, lines 25-63, in particular column 1, lines 57-63*).

Claim 3

Robinson disclosed the method of claim 3 further comprising determining the probabilities that a user belongs to various user type classes (*column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28*).

Claim 5

Robinson disclosed the method of claim 3 wherein the at least one resource-based factor includes probabilities that users of the various user type classes will use the resource at least once (*column 3, lines 3-15*).

Claim 6

Robinson disclosed the method of claim 1 wherein the at least one resource-based factor includes probabilities that users of the various user type classes will use the resource at least once (*column 3, lines 3-15*).

Claim 7

Robinson disclosed the method of claim 3 wherein the at least one resource-based factor is a probability that the resource will be used at least once and is based on a sum, over all user type classes, of a product of (a) a probability that the resource is used at least once, given that an application to which the resource belongs is used at least once, by a user of the user type class (*column 3, lines 3-15; column 17, lines 2-11*), [(b)] a probability that the application to which the resource belongs is used at least once by a user of the user type class (*column 3, lines 3-15; column 17, lines 2-11*), and (c) a probability that the user belongs to the user type class (*column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28*).

Claim 8

Robinson disclosed the method of claim 1 wherein the at least one resource-based factor includes an association of each of the resources to at least one application class (*column 2, lines 48-56*).

Claim 10

Robinson disclosed the method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes maximizing an expected value density of downloaded resources (*column 1, lines 25-63, in particular column 1, lines 57-63*).

Claims 15-19 and 21

The limitations of claims 15-19 and 21 are substantially the same as the limitations of claims 1, 3, 8 and 6 and are rejected in the same manner.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014).

Claim 4

Robinson did not explicitly state the method of claim 3 wherein the probabilities that user belongs to various user type classes are determined based on evidence using a Bayesian network. Official Notice is taken that it was known at the time of invention to make use of Bayesian networks for probability. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the probability system of **Robinson** with Bayesian probability. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use all available technologies in order to accurately determine probability.

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9. Claims 9, 11-12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry** et al. (USPN 5,925,100).

Claim 9

Robinson did not explicitly state the method of claim 8 wherein the at least one resource-based factor includes an indication, for each of the resources, of whether the resource is a core component or an optional component of the application class with which it is associated. **Drewry** demonstrated that it was known at the time of invention to provide optional and required components (column 10, lines 12-14). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the web/network based customized advertisement system of **Robinson** with prefetching dependent or likely to be used media or application objects as found in **Drewry's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to maximize benefit by reducing latency of networks (column 6, lines 4-7, including objects that "might" be needed).

Claim 11

Robinson did not explicitly state the method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes minimizing an expected cost of not having a needed resource. **Drewry** demonstrated that it was known at the time of invention to minimize an expected cost of not having a needed resource (column 5, line

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66 to column 6 line 51, "On the Internet and for Interactive TV (ITV), the networks employed are relatively slow and, thus, incur a high latency (including slow or delayed transmission time) ...", thus prefetching to reduce transmission latency effects; further note column 7, lines 12-20; and caching effectively column 12, line 63 to column 16, line 10). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the web/network based customized advertisement system of **Robinson** with prefetching dependent or likely to be used media or application objects as found in **Drewry's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to maximize benefit by reducing latency of networks (column 6, lines 4-7).

Claim 12

Robinson and **Drewry** disclosed the method of claim 11 wherein the expected cost of not having a needed resource is based on one of enhancement rates of the resources and value densities of the resources (***Drewry**: column 14, lines 41-47; column 15, lines 38-43*).

Claim 20

The limitations of claim 20 correspond to the limitations of claim 9 and as such are rejected in the same manner.

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10. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry** et al. (USPN 5,925,100) in further view of **Cherkasova** et al. (USPN 6,425,057).

Claim 13

Robinson and **Drewry** did not explicitly state the method of claim 12 wherein the enhancement rate of a resource is based on the size of the resource, a probability of that resource being used at least once, and a cost of later downloading the resource. **Cherkasova** demonstrated that it was known at the time of invention to calculate and enhancement rate based upon size, using, and cost of later download (column 3, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the predictive advertisement delivery system of **Robinson** and the prefetching and caching of **Drewry** with efficient caching schemes as found in **Cherkasova's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to further improve network latency (column 3, lines 13-23).

Claim 14

Robinson and **Drewry** did not explicitly state the method of claim 12 wherein the value density of a resource is based on the size of the resource and the probability that the resource will be used at least once. **Cherkasova** demonstrated that it was known at the time of invention to calculate and enhancement rate based upon size and using (column

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3, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the predictive advertisement delivery system of **Robinson** and the prefetching and caching of **Drewry** with efficient caching schemes as found in **Cherkasova's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to further improve network latency (column 3, lines 13-23).

11. Claims 22-40 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry et al.** (USPN 5,925,100) in view of **Cherkasova et al.** (USPN 6,425,057) and in further view of **Fischer et al.** (USPN 6,438,672).

Claim 22

Robinson and **Drewry** disclosed the limitations of the claim as indicated in claims 1 and 11 above. Further, **Robinson** and **Drewry** disclosed *accepting probabilistic relationships between user based factors and resource based factors* (column 17, lines 1-12). **Robinson** and **Drewry** did not explicitly state *two storage facilities* or *accepting at least one storage facility-based factor* to base minimizing upon. **Cherkasova** demonstrated that it was known at the time of invention to make use of systems which accept resource-based factors (column 3, lines 20-22), accept storage-based factors (column 3, lines 18-20), and minimize latency to resource distribution based upon factors (column 3, lines 13-18). It would have been obvious to one of ordinary skill in

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the art at the time of invention to implement the software distribution system of **Robinson and Drewry** with a caching system similar to that described in **Cherkasova's** teaching based upon factors. This implementation would have been obvious because one of ordinary skill in the art would be motivated to efficiently distribute software without unnecessary work duplication (**Cherkasova**: column 1, line 39 to column 2, line 8).

Cherkasova did not explicitly state *each storage facility having a request-to-receive latency*. **Fischer** demonstrated that it was known at the time of invention to provide multiple caches (column 1, lines 29-52). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the distribution system **Cherkasova** with Two Level Cache as found in **Fischer's** teaching and thus provide for multiple storage facilities with respective request-to-receive latencies. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a system of increased efficiency of resource/software/object distribution (column 2, lines 13-17; column 1, lines 45-52; lines 56-58).

Claim 23

The limitations of claim 23 correspond to the limitations of claim 3 and as such are rejected in the same manner.

Claim 24

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The limitations of claim 24 correspond to the limitations of claim 3 and as such are rejected in the same manner.

Claim 25

The limitations of claim 25 correspond to the limitations of claim 4 and as such are rejected in the same manner.

Claim 26

The limitations of claim 26 correspond to the limitations of claim 6 and as such are rejected in the same manner.

Claim 27

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 26 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities (**Cherkasova**: column 3, lines 25-27) and a relative request-to-receive latency of each of the two storage facilities (**Cherkasova**: column 3, lines 18-20; **Fischer**: column 1, lines 45-47 and column 2, lines 13-17).

Claim 28

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 27 wherein the total expected latencies is a function of the frequencies at which users of the various user type classes will use each of the resources, and a difference between

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the relative request-to-receive latencies of the two storage facilities (**Cherkasova**: column 3, lines 13-22; **Fischer**: column 1, lines 56-57).

Claim 29

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 22 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities and a relative request-to-receive latency of each of the two storage facilities (see claim 27).

Claim 30

The limitations of claim 30 correspond to the limitations of claim 12 and as such are rejected in the same manner.

Claim 31

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 30 wherein the value densities of the resources are based on the frequency of use [of] the resources and a difference in [request-to-receive] latencies between the at least two storage facilities (**Robinson**: column 3, lines 3-15; **Fischer**: column 1, lines 40-52).

Claims 32-38

The limitations of claims 32-38 correspond to the limitations of claims 1 and 22-31 and as such are rejected in a similar manner in view of rejections of limitations found in

claim 1. Further, **Robinson** disclosed *determining a probability of using a resource by a composite user* (column 15, lines 20-29).

Claim 39

The limitations of apparatus claim 39 correspond to the limitations of method claim 22 and as such are rejected in the same manner. Further, **Robinson** disclosed *means for intelligently downloading resources* (column 1, line 65 to column 2, line 8).

Claim 40

The limitations of claim 40 correspond to claim 22 and as such are rejected in the same manner.

Claims 42 and 43

Robinson, Drewry, Cherkasova and Fischer did not explicitly state the method of claim 40 further comprising changing a storage capacity of the storage medium based on at least one of a change in value and cost or comprising changing the storage capacity when a ratio of value to cost is greater than one. Official Notice is taken that it was known at the time of invention to maximize value of a cache to cost. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the caching of the **Robinson, Drewry, Cherkasova and Fischer** system with the maximum value (size/speed) of a cache to cost. This implementation would have been obvious

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because one of ordinary skill in the art would be motivated to get the biggest benefit to the overall design for the money spent.

Claim 44

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 43 wherein the at least one user-based factor is a function of a time offline until the intermediate storage facility is reconnected with a source. Official Notice is taken that it was known at the time of invention to for systems going offline to increase latency. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the latency of **Cherkasova** with offline considerations. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide the most accurate consideration of all facts concerning utility (cost and latency and whether needed) value.

Claim 45

Robinson, Drewry, Cherkasova and Fischer disclosed the method of claim 44 wherein the time offline is a probability distribution considering at least one of (i) resource context, (ii) a user type class, and (iii) a recent usage pattern (*see claim 7*).

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Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood
September 19, 2005



ANIL KHATRI
PRIMARY EXAMINER